

## Case Report :

# PEDIATRIC AUTOIMMUNE NEUROPSYCHIATRIC DISORDERS WITH STREPTOCOCCUS INFECTION

Mohapatra Satyakam and Rath NM

### ABSTRACT

*Paediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PANDAS) is a unique syndrome which is associated with a recent infection caused by the group A b-haemolytic streptococcal bacteria. Although b-haemolytic streptococcal infection is prevalent in India, we are less aware of cases of PANDAS from the Indian subcontinent. We report a case of OCD who presented to us with features of PANDAS.*

**Key words- EXPRESSED, EMOTION, PSYCHIATRIC, DISORDERS**

### Introduction

Swedo et al, 1998 [1] first proposed that some cases of childhood-onset obsessive-compulsive disorder (OCD) and tic disorders might be, like Sydenham chorea (SC), a post-streptococcal disorder of immunological character. They coined the acronym PANDAS to identify the occurrence of pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections. According to the National Institute of Mental Health (NIMH) [2], children with PANDAS are clinically identified by five criteria. They are:

1. "Presence of obsessive-compulsive disorder and/or a tic disorder (meeting DSM-IV TR criteria).
2. Pediatric onset of symptoms (age 3 years to puberty).
3. Episodic course characterized by acute, severe onset and dramatic symptom exacerbations.
4. Association with neurological abnormalities (motoric hyperactivity, or adventitious movements, such as choreiform movements).
5. Temporal relationship between GABHS (Group A B-hemolytic streptococcus) infections and symptom exacerbations.

Although GABHS infection is prevalent in India [3] surprisingly there is lack of cases of PANDAS being reported from here. This is possibly due to lack of awareness regarding the same amongst the psychiatric fraternity. The few reports and the poor understanding of this condition need to be overcome.

### Case history

Mr. A., 15-year-old adolescent Hindu male presented to the Child and Adolescent Psychiatry outpatient department (OPD) with sudden onset of abnormal involuntary movements involving the face and shoulder and repetitive hand washing, spitting and prolonged bathing for the last 2 weeks. 1 month prior to this patient had developed high grade fever, cough and throat pain which lasted for 10 days. After the treatment from physician, his general condition had improved. Few days after the resolution of fever, the parents noticed involuntary movements involving the face and shoulder. Movements were sudden, rapid and non-rhythmic. As per the parents, these movements were present whenever the child was awake and ceased during sleep. Patient also started washing his hands repeatedly and taking prolonged bathing for which the patient expressed distress to the parents but was unable to stop. His condition worsened with time, his sleep and appetite decreased markedly and he became irregular in school.

Child was born after full-term normal delivery at hospital. Regular immunizations were carried out. At birth, her weight and length were normal. Medical records and history suggested normal development. There was no family history of seizures or other abnormal movements/psychiatric complaints. On examination, the child was well oriented and higher mental functions were intact. Vitals were within normal limits. There were tic movements in both shoulders. Movements decreased but persisted when the child was observed in a restful state. Rest of the nervous system and other body systems were normal on examination. On mental status examination obsessions regarding contamination was elicited.

Hemoglobin (11.6 g/dl), total leukocyte count (8800/ mm), differential leukocyte count (P58n L32 M8 E2), and erythrocyte sedimentation rate (11 mm fall in first hour) were within normal limits. Other blood investigations revealed normal sugar, electrolytes levels, and liver function tests. In view of recent past history of sore throat, anti-streptolysin O (ASO) titers were estimated and found to be high (350 Todd units).

Thus, diagnosis of PANDAS syndrome was made, as our case met all the required diagnostic criteria.

Patient was started on Cap fluoxetine 20mg/day which was raised to 40mg/day on an outpatient basis with psycho education of the patient and family members. Currently patient is in our and paediatrician follow up and showing consistent improvement.

### Discussion

PANDAS are a recently described subgroup of childhood disorders, and there has been a great deal of public and physician interest in their pathophysiology, diagnosis, and management. The literature search reveals that only few of PANDAS cases have been reported from India . Our case fits the classical description which is laid down by the NIMH [2].

There is lack of knowledge among the psychiatrists and pediatricians about the diagnosis and management of PANDAS. Diagnostic criteria for PANDAS was proposed by NIMH. As with any newly identified syndrome, the diagnosis of PANDAS is controversial. Though the laid down diagnostic criteria include episodic course of exacerbations (temporally correlated with GABHS infection) and remissions, what time period constitutes “temporal” association has not been defined. Usefulness of this diagnostic criteria is disputed by some scientists who think this sub-set of patients do not differ significantly from the remainder of the patient population, and that infections do not increase the risk of OCD or tics. Consequently, the PANDAS model is a complex and rapidly-moving area of medical research. PANDAS is currently not listed as a diagnosis by the International Statistical Classification of Diseases and Related Health Problems (ICD) or the Diagnostic and Statistical Manual of Mental Disorders (DSM).

Treatment for the PANDAS subgroup of children with OCD is not different from treatment for others with this diagnosis. Murphy et al , [4] [5] recommended the use of combined behavioral therapies and low doses of selective serotonin reuptake inhibitors (SSRIs) with rapid taper to clinically effective levels as reported in the literature]. Children with PANDAS appear to be unusually sensitive

to the side-effects of SSRIs and other medications, so it is important to “start low and go slow” when using these medications. The best treatment for acute episodes of PANDAS is to eradicate the streptococcal infection causing the symptoms (if it is still present). A throat culture should be done to document the presence of streptococcal bacteria in the throat. If the throat culture is positive, a single course of antibiotics will usually get rid of the streptococcal infection and allow the PANDAS symptoms to subside. Early studies [6] of prophylactic antibiotics in children with PANDAS have been complicated by poor compliance and the dilemmas of placebo treatment. Swedo et al, [7] mentioned that “too early” to recommend prophylactic antibiotics for PANDAS. IV immunoglobulin therapy is generally recommended only for severe or persistent cases. Although still experimental, it may have potential for the future, especially in those not responding to conventional treatment.[8]

Some recent development in the field of PANDAS includes identification of a small group of patients with an adolescent-adult “variant” of PANDAS [9] This possible Adolescent-Adult Variation of PANDAS is under review.

The lack of cases of PANDAS in the Indian context can be attributed to an inadequate awareness regarding this disorder and an infrequent liaison among the various specialties. We reported this case since it is important to keep this disorder in mind when treating children. The presence of the significant co- morbidity can lead to a marked disability in terms of the academic performance and the social adjustments in these children and hence a timely intervention can be helpful[10]. A good cross referral between the paediatricians and the psychiatrists can serve in decreasing and eliminating the morbidity and the disability which are associated with this disease.

### REFERENCES

1. Swedo S, Leonard HL, Garvey M, et al. Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infection: clinical descriptions of the first 50 cases. *Am J Psychiatry*.1998;155:264-271.
2. National Institute of Mental Health. Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections (PANDAS). <http://intramural.nimh.nih.gov/pdn/web.htm>.
3. Nandi S, Kumar R, Ray P, Vohra H, Ganguly Nk. Group A Streptococcal Sore Throat In A Periurban Population Of Northern India: A One-Year Prospective Study. *Bull World Health Organ* 2001, 79:528–33.

4. Murphy T. Tics, compulsions and strep throat. Program and abstracts of the American Academy of Child and Adolescent Psychiatry 49th Annual Meeting; October 22-27, 2002; San Francisco, California. Institute.
  5. Riddle M, Reeve EA, Yaryura-Tobias JA, et al. Fluvoxamine for children and adolescents with obsessive-compulsive disorder; a randomized, controlled, multicenter trial. *J Am Acad Child Adolesc Psychiatry.* 2001;40:222-229.
  6. Garvey MA, Perlmutter SJ, Allen AJ, et al. A pilot study of penicillin prophylaxis for neuropsychiatric exacerbations triggered by streptococcal infections. *Biol Psychiatry.* 1999;45:1564-1571.
  7. Swedo S. Pediatric autoimmune neuropsychiatric disorders associated with strep infections (PANDAS). Program and abstracts of the American Academy of Child and Adolescent Psychiatry 49th Annual Meeting; October 22-27, 2002; San Francisco, California. Symposium.
  8. Perlmutter SJ, Leitman SF, Garvey MA, Hamburger S, Feldman E, Leonard HL, et al. Therapeutic plasma exchange and intravenous immunoglobulin for obsessive-compulsive disorder and tic disorders in childhood. *Lancet* 1999;354:1153-8.
  9. Bodner SM, Morshed SA, Peterson BS. The question of PANDAS in adults. *Biological Psychiatry,* 2001; 49:807-810.
  10. Murphy ML, Pichichero ME. Prospective identification and treatment of children with paediatric autoimmune neuro-psychiatric disorder associated with Group A streptococcal infection (PANDAS). *Arch Pediatr Adolesc Med* 2002;156: 356-61
- 

**Authors:**

1. **Dr. Satyakam Mohapatra, MD**  
Senior Resident  
Mental Health Institute  
S. C. B. Medical College  
Cuttack, Odisha, 753007
2. **Dr. N. M. Rath, MD**  
Director and Superintendent  
Mental Health Institute  
S. C. B. Medical College  
Cuttack, Odisha, 753007

**CORESPONDING AUTHOR**

**Dr. Satyakam Mohapatra, MD**  
Senior Resident  
Mental Health Institute  
S. C. B. Medical College  
Cuttack, Odisha, 753007  
E MAIL ID- satyakgmu@gmail.com  
Mobile No- 08895293997

